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Environmental Justice after War: Environmental Weaponisation, Gender, and Transformative Remedies in Ukraine

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Abstract

This article examines environmental harm caused by Russia's full-scale invasion of Ukraine as both a method and a consequence of warfare, and analyses its implications for accountability, gender justice, and post-conflict remedies. It argues that attacks on ecosystems and life-sustaining infrastructure can weaken civilian resilience and, where purposefully exploited, may amount to environmental weaponisation. Through the concept of double vulnerability, the article shows how ecological destruction interacts with gendered and intersectional inequalities, shaping exposure to displacement, resource insecurity, livelihood loss, unpaid care burdens and barriers to recovery. Drawing on doctrinal legal analysis, feminist scholarship and Ukraine-specific practice, the article identifies gaps in international humanitarian law and evaluates the potential of *jus post bellum*, transformative reparations and rights-based mechanisms to address ecological and social harm together. It then examines emerging remedial practices and recovery strategies in Ukraine, concluding that their transformative potential depends on recognising cumulative and non-material harms, ensuring meaningful participation, and embedding gender equality and human rights in implementation.

Keywords: *Gender and Environment, Double Vulnerability, Environmental Weaponisation, Transformative Reparations, Gender-Sensitive Recovery*

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Introduction

Russia's invasion of Ukraine, particularly since the full-scale invasion of February 2022, has caused widespread contamination of air, water, and soil, and destroyed ecosystems. Approximately 30% of Ukrainian territory is affected by landmines and explosive remnants of war, rendering land unusable for agriculture, habitation, or conservation (Hryhorczuk et al 2024, 1-6). Shelling, wildfires, deforestation, and attacks on infrastructure generated environmental effects that may persist long after hostilities cease.

The occupation of the Zaporizhzhia Nuclear Power Plant and the destruction of the Nova Kakhovka Dam illustrate how interference with environmentally sensitive or life-sustaining systems can produce long-term, transboundary consequences. In contemporary warfare, environmental destruction operates as a force multiplier capable of displacing populations, undermining food and water security, and exerting coercive pressure on civilian life. Such attacks weaken civilian resilience and strain governance and social stability. Thus, environmental destruction can compound pre-existing vulnerability in people and environments. Ukraine's example thus illustrates with particular clarity how environmental harm is not merely an incidental by-product of war nor the "silent victim" as it is often referred to, but is often deliberately exploited and weaponised as a method of warfare (ICRC 2020a, 40).

These environmental harms do not occur in isolation, as damage to ecosystems inevitably translates into social, economic, and health vulnerability. They intersect with, and exacerbate, pre-existing gender inequalities, shaping how different groups experience both the immediate consequences of the conflict and the prospects for recovery (Killeen 2021, 3; UN Secretary-General 2025, 7-11).

Against this background, the article asks three related questions. First, under what circumstances may conflict-related environmental destruction be conceptualised as environmental weaponisation rather than merely an incidental consequence of hostilities? Second, how do gendered and intersecting inequalities influence the distribution of environmental harm among civilians and the extent to which such harm is recognised within international legal frameworks? Third, how should remedial and recovery frameworks respond to the ecological and social dimensions of environmental harm in Ukraine?

The article advances two connected arguments. First, environmental weaponisation may operate not only through direct attacks on the natural

environment, but also through the deliberate exploitation of foreseeable cumulative and cascading environmental consequences arising from attacks on life-sustaining systems. Existing international humanitarian law provides relevant rules but does not adequately articulate how the purpose and severity of environmental destruction should be assessed where harm propagates across ecosystems, infrastructure, public health and civilian survival.

Second, the article develops the concept of double vulnerability to describe the simultaneous degradation of ecosystems and intensification of pre-existing social and gender inequalities. The concept does not presume that all women experience environmental harm identically or that gendered harm is limited to women. Rather, it draws attention to the structures through which environmental risks, care responsibilities, access to resources and recovery opportunities are unevenly distributed. Gender and intersectional analysis are therefore relevant not only to describing civilian consequences, but also to assessing the gravity, foreseeability and legal characterisation of environmental harm.

Methodologically, the article employs qualitative legal analysis informed by feminist and intersectional scholarship. It combines doctrinal interpretation of international humanitarian law, human rights law, international environmental law and *jus post bellum* with an examination of emerging legal and institutional mechanisms in relation to Ukraine. Ukraine is examined as a case study rather than as a basis for a comprehensive or comparative account of conflict-related environmental harm. Thus, it is used to examine environmental harm, weaponisation and its gendered and intersecting consequences, and to assess how existing legal, remedial, and recovery frameworks recognise and respond to these forms of harm during an ongoing conflict.

The article's contribution is therefore both conceptual and institutional. Conceptually, it connects environmental weaponisation to differentiated and intersecting civilian harm through the notion of double vulnerability. Institutionally, it evaluates whether Ukraine's emerging reparation and recovery mechanisms can move beyond formally neutral (Kartepe and Zheltukha 2025, 3) and narrowly monetary models of repair. It argues that these mechanisms have transformative potential if they examine and recognise harm from a cumulative and intersectional perspective whilst enabling meaningful participation and preventing reconstruction from reinstating the inequalities that preceded and were intensified by the war.

1. Environmental Damage and Its Human Impact in the War Against Ukraine

The European Commission documents that, alongside the more visible humanitarian disaster, every component of Ukraine's natural environment has been impacted by the war. The scale of destruction is staggering: an estimated 17 million hectares of land, about 28% of the country, have been directly affected by military operations (European Commission 2025). A comprehensive overview of the Russia's invasion's environmental impact can be seen on an online map maintained by the 'EcoDozor' project,¹ which has documented tens of thousands of incidents across Ukraine by 2025 (EcoDozor 2025).

Furthermore, according to the State Environmental Inspectorate, from the beginning of the full-scale invasion through June 2026, environmental losses have reached EUR 136.9 billion (Ukrinform 2026). The Fifth Rapid Damage and Needs Assessment for Ukraine supports this estimation by showing how war-related environmental harm is distributed across sectors. In addition to the standalone 'environment, natural resource management, and forestry' sector, the report separately records major impacts in water supply and sanitation, irrigation, and explosive hazards management, indicating that the environmental consequences of the war cannot be confined to a single accounting category (RDNA5 2026, 21).

These studies show that conflict-related environmental harm should not be understood as a discrete or isolated category, but as a cross-sectoral and cascading form of harm affecting ecosystems, infrastructure, public health, and civilian survival. More broadly, they demonstrate that the environmental and humanitarian consequences of armed conflict are long-lasting, multilayered, and mutually reinforcing.

1.1. Scale and Patterns of Environmental Harm

To illustrate the scale and patterns of environmental harm, it is useful to first consider how the full-scale war has reshaped Ukraine's pollution patterns. Before 2022, Ukraine's air pollution largely reflected the country's industrial and energy profile, especially emissions from coal-fired power plants, metallurgy, mining and other heavy industries concentrated in major industrial regions and cities (CEE Bankwatch Network 2020). The invasion-caused industrial halt contributed to a fall in greenhouse emissions in 2022

¹ The Ecodozor platform was developed by the Zoï Environment Network, together with the UN Environment Programme, the Organisation for Security and Co-operation in Europe and the REACH Humanitarian Initiative.

(European Commission 2025). Yet this apparent reduction was offset by new war-related emissions: military operations released a total of 237 million tonnes of carbon dioxide equivalent (tCO₂e) only by the end of the third year of the full-scale invasion, the equivalent of the annual emissions of Austria, Hungary, the Czech Republic and Slovakia combined (de Klerk et al. 2025, 5).

Explosions, forest fires, and attacks on energy and industrial infrastructure have triggered acute, often highly hazardous pollution episodes, with pollutant concentrations rising sharply immediately after some strikes. At the same time, factory destruction or shutdowns, the contraction of heavy industry, and large-scale population displacement have reduced routine emissions in many urban and industrial centres. Repeated attacks on the power grid have further altered fuel-use patterns, increasing reliance on diesel generators, wood, coal, and other more polluting fuels during energy shortages, particularly in winter. The result has been an uneven and volatile geography of air pollution: some conventional sources have diminished, while localised, irregular, and highly toxic pollution episodes have become more frequent (Savenets et al. 2026).

Soils and water systems have also suffered extensive harm. Over 10 million hectares of farmland have been degraded by explosions, chemical contamination, and the loss of irrigation infrastructure, leading to serious risks for food production and public health. The Kakhovka Dam explosion alone caused environmental damage worth EUR 2.9 billion, flooding 63,447 hectares of forest and causing the loss of over 70% of the reservoir's water, with significant consequences for the Dnipro River and Black Sea ecosystems (Margitay et al. 2025, 836; European Commission 2025).

By late 2024, 31% of Ukraine's total area was damaged or contaminated, with significant areas suffering more than 75% loss of fertility. Around 30% of the country (139,000 km² of land and 14,000 km² of water) is contaminated with explosives and mines (Margitay et al. 2025, 837). Furthermore, 20% of Ukraine's protected areas have been affected by the war, including 2.9 million hectares of the Emerald Network (Ministry of Economy of Ukraine 2025).

1.2. The loss of biodiversity

The International Union for Conservation of Nature ('IUCN') has recognised military activity in Ukraine as a direct factor contributing to the risk of extinction of species (Vasyliuk 2025). Although Ukraine covers less than 6% of Europe's territory, it hosts approximately 35% of Europe's biodiversity, much of which is now under severe threat. As of 2025, around

600 animal species and 750 plant and fungal species, many of them listed on the Red List, are at risk of extinction. Habitat destruction, flooding, mining, oil spills, and fires have devastated ecosystems, particularly in the steppe, river delta regions and aquatic environments (European Commission 2025).

Eight reserves, two biosphere reserves, and ten national parks remain under occupation. For example, in the Askania-Nova Reserve, 7,109 hectares of unique steppe burned, 200 rare animals were lost, and total damage reached EUR 1.2 million. Nationally, 75,110 wild animals have been recorded as killed, with total biodiversity damage of at least EUR 3.2 million (Margitay et al. 2025, 833-835). The 2024 IUCN European Red List reports a worsening status for six mammals due to the war and the destruction of the Kakhovka Dam, with Nordmann's birch mouse losing up to 70% of its global population. Local populations of species such as the sea zander and the Danube crested newt have collapsed, while mass deaths of Black Sea dolphins and porpoises have been linked to acoustic shock, wartime pollution, and oil spills following drone attacks. Although some limited signs of natural recovery have appeared, such as the return of vegetation to the drained Kakhovka Reservoir bed, most experts agree that the war has severely increased the pressure on already vulnerable species and habitats, with long-term effects that remain difficult to assess due to restricted access to the hostilities zones (Vasyliuk 2025).

Forest ecosystems have been among the most severely affected. Around 15% of Ukraine's total forest cover (1.7 million hectares) has been damaged by shelling, fires, and contamination. Heavy metals, fuel residues, and radioactive materials from military debris threaten biodiversity and human health. In addition, the presence of landmines and unexploded ordnance prevents reforestation and poses long-term risks to people and wildlife (European Commission 2025).

As we see, the Ministry of Environmental Protection, together with the UN, the EU and other organisations and institutions, has been developing sectoral methodologies to quantify environmental harm across air, water, soil, forests, and biodiversity, simultaneously adopting corresponding laws. However, these tools rely on sectoral indicators and cannot yet capture the full complexity of damage to ecological systems or intangible losses. Moreover, the scale of environmental destruction continues to grow due to the ongoing aggression. Thus, any comprehensive environmental assessment remains provisional and is updated annually (Zhou and Anthony 2023).

2. Environment, gender and security: A double vulnerability

The environment is open to exploitation not only, as it has been described, as a “silent victim” (ICRC 2020a, 40), but also as a weapon in a utilitarian manner, exploiting its *omnipresent nature* (Stefanik 2017, 93) to the detriment of the environment itself and as a grave threat to human health and life. Within this section, we aim to explore the prohibition on environmental weaponisation in *jus in bello* and *jus post bellum* terms, with a specific focus on the latter through a feminist lens. In so doing, it is questioned to what extent existing norms protect the environment and gender, both of which occupy a peripheral place in international humanitarian law (‘IHL’) (O’Rourke and Martin 2023, 1601).

Environmental destruction has the potential to compound the existing nexus of vulnerability among environment, gender, and security. In other words, environmental destruction acts as a threat multiplier in armed conflict, interacting with pre-existing vulnerabilities, deepening poverty, and eroding institutional capacity to mitigate or adapt to the evolving effects of war (ICRC 2020b, 16). Over 110 states have identified environmental degradation as a national security threat (Holland and Vagg 2013, 1–3), including Ukraine (Ukraine’s National Recovery Plan 2022). This recognition has not yet translated into a comparable articulation within international humanitarian law. Protections remain largely siloed as either environmental or gender-related, with little attention to how environmental harm produces gendered impacts (Ide et al. 2021, 44).

Field reporting, however, documents a clear empirical nexus between environment, gender, and security both during and after a conflict (O’Rourke and Martin 2023, 1602; DCAF – Geneva Centre for Security Sector Governance 2022, 7–17; Caroli et al. 2022, 17–27). This provides the empirical basis for understanding such harm as a form of double vulnerability.

Where harm occurs simultaneously to the natural environment and people, a “double vulnerability” materialises as its effects place additional pressure on those already most at risk (Pantazopoulos 2024, 366, 369–370). Such double vulnerability is evident in the destruction of the Nova Kakhovka Dam: the immediate flooding and widespread contamination disrupted drinking-water supplies, sanitation, irrigation, and energy systems across downstream communities, affecting both the natural environment and the population. As these systems collapsed, households were pushed into displacement and emergency coping; women faced heightened exposure and protection risks, compounded by mobility constraints and intensified caregiving burdens during evacuation and in temporary shelters. For example, evacuation

often required women responsible for children, older relatives or persons with disabilities to move through flooded or contaminated areas with their dependants, while carrying essential supplies. Displacement into collective shelters, especially for pregnant women and new mothers, increased dependence on emergency services at a time when access to such support was already strained (UNFPA 2023a, 2023b, WHO 2025).

Double vulnerability is also clearly reflected in energy poverty, healthcare challenges affecting women, the elderly, and children, rising food insecurity, water contamination and scarcity, and the loss of livelihoods (WHO 2025). The compounding effects of the invasion and climate-induced energy crises have placed particular strain on women-led households, especially those headed by older women and single mothers, who are more likely to experience energy poverty while managing childcare and household responsibilities with inadequate resources (Shevchuk and Duncanson 2024, 8).

The double-vulnerability is reflected in the invasion's disproportionate impact on women and girls, who face heightened risks of poverty, displacement, and gender-based violence and constitute the majority of those in need of humanitarian assistance. For instance, from April 2022 to July 2025, the destruction of water infrastructure has led to a severe shortage of clean drinking water (Ministry for Development of Communities and Territories of Ukraine 2025). This has disproportionately burdened women, who are often responsible for securing water and managing household care, by forcing families to rely on unsafe water sources and exposing them to heightened health and daily survival risks (UNICEF 2023).

The devastation caused by the invasion has led to high levels of unemployment and economic insecurity, especially among women, who account for 82% of those registered as unemployed (RDNA5 2026, 52). 58% of internally displaced women depend primarily on state welfare payments, while 40% rely directly on humanitarian aid for survival (Ukraine reSCORE 2023, 4). Occupational segregation, part-time and precarious work, displacement, and caregiving responsibilities continue to constrain women's labour-market access and income security, factors that have likely contributed to the widening of the gender pay gap since 2021, before the full-scale invasion (RDNA5 2026, 52). The war has also increased the risk of gender-based violence, including conflict-related sexual violence, human trafficking, and intimate partner violence (Shevchuk and Duncanson 2024, 7). Despite their crucial roles in humanitarian, defence, and early recovery efforts, women continue to encounter barriers to formal decision-making and equality in economic life (Serdyuk 2024).

Taken together, it is through these cumulative effects that double vulnerability materialises (Ide et al. 2021, 45-48). A double-vulnerability lens

thus counsels that both *in bello* implementation and *post-bellum* measures (including remediation, environmental monitoring, emissions disclosure, information sharing, reparations, and inclusive participation in planning) explicitly account for gender-differentiated impacts. Nevertheless, it is unclear whether exploiting environmental conditions within a “double-vulnerability” dynamic amounts to environmental weaponisation under IHL. Environmental harm may produce immediate harm to civilian survival alongside longer-term insecurity through cascading social, economic, and ecological effects. Where such effects are foreseeable or deliberately induced, environmental harm may move beyond collateral damage and become a tool of weaponisation (Sjöstedt 2017, 76).

In this sense, environmental damage can operate not merely as collateral but as a deliberate strategy pursued with at least reckless disregard for the substantial risk that it will intensify pre-existing (gendered) vulnerabilities, thereby amplifying coercion and control during hostilities. This analytical possibility, however, exposes a doctrinal tension between the functional use of environmental harm and the high threshold required for “environmental weaponisation” under IHL.

2.1. Environmental Weaponisation and IHL

As set out in Rule 3 of the ICRC’s Guidelines on the Protection of the Natural Environment in Armed Conflict, the prohibition on using the destruction of the natural environment as a weapon constitutes a rule of customary international law (ICRC 2020a, 40). In this context, “*weaponisation of the environment*” shall be understood broadly as a tactic or method of warfare rather than an incidental casualty (ICRC 2020a, 41). Such a classification is important, as it must be read alongside Article 35(2) of the 1977 Additional Protocol I to the Geneva Conventions (‘AP I’), which imposes a broad obligation to scrutinise means and methods of warfare.

In this sense, environmental weaponisation may generate differentiated sex and gender-specific harms. Gender analysis identifies differentiated gender-based harms (Tengroth and Lindvall 2015, 116–119), whereas intersectional analysis examines how gender interacts with other social, structural, and environmental factors that produce compounded vulnerability (e.g. overlapping forms of discrimination individuals may face based on factors such as gender, age, socio-economic class, religion, disability, or sexual orientation) (Raju and Bruun 2023, 2). This approach, therefore, allows the consequences of environmental weaponisation to be assessed not as a “neutral” category of harm, but in light of the social structures through which its effects are distributed. Failure to include gender and intersectional

perspectives may distort assessments of civilian harm and, in cases of environmental destruction, obscure the full extent of immediate, cumulative and cascading conflict-related impacts (Raju and Bruun 2023, 2, 10, 11).

The abovementioned Rule 3 captures conduct that utilises environmental destruction as a means of harming the enemy. Within ICRC's Commentary, the type of conduct that is covered by this prohibition is elaborated as (i) deliberate attacks against the natural environment in violation of the principles of distinction and proportionality; (ii) the wanton destruction of natural resources, i.e. destruction not demanded by imperative military necessity; and (iii) environmental modification techniques (ENMOD 1977, art. 1). It is noteworthy that a specific purpose of destroying the natural environment is sought. Therefore, a mere military aim without a specific purpose of environmental destruction does not, by itself, trigger this norm. However, it is debatable whether an eventual intent, omission, or culpable risk would meet the specific purpose threshold required to trigger the prohibition on environmental weaponisation.

Environmental harm often arises as a foreseeable and, in practice, instrumental consequence of operations framed in military or infrastructural terms, even where any immediate military advantage is limited. Such attacks contribute to the weakening of civilian resilience and to the straining of governance and social stability. Furthermore, due to the complex and interconnected nature of the environment, weaponisation can operate through cascading and cumulative effects, whereby environmental damage propagates into water and sanitation breakdowns, contamination, and displacement, even when the natural environment is not framed as the formal target (Lee and Powell 2025, 203-204; 210-211). Contemporary patterns of attack against energy infrastructure, for instance, show how weaponisation may operate beyond direct attacks on the natural environment (Lee and Powell 2025, 203, 210-211). In Ukraine, systematic strikes on power stations, dams, pipelines and grid assets, including the destruction of the Kakhovka Dam and attacks on substations supplying the Khmelnytskyi and Rivne nuclear power plants, have also sought to weaken civilian resilience and disrupt national energy systems, with foreseeable, cascading environmental and gendered effects.

We argue that such patterns can satisfy the purpose element, in which environmental consequences are deliberately weaponised as a method of warfare to further harm the enemy. Thus, this conclusion does not depend on whether the environment is protected for its importance to human survival and security, or for its intrinsic ecological value. Conversely, where the purpose element is not met, the same conduct may still be unlawful under the distinction, proportionality, and the specific regimes governing critical

infrastructure if read through IHL's general rules and its special protections for objects indispensable to survival (AP I, art. 54) and works containing dangerous forces (AP I, art. 56; Pantazopoulos 2024, 371).²

A further element of the prohibition set out in Rule 3 worth examining is 'destruction'. However, the severity level required to reach the destruction threshold is not specified in the norm. AP I strengthened the protection of the natural environment in several ways. Article 35(3) protects the environment from "widespread, long-term and severe" harms. Article 54 protects objects indispensable to the survival of the civilian population, and Article 55(2) prohibits attacks against the natural environment by way of reprisals. However, the State practice underlying the term "destruction" in this context does not tether Rule 3 to the "widespread, long-term and severe" threshold set out in Article 35(3) and the second sentence of Article 55(1) of AP I, nor to the first clause of Rule 45 of the ICRC Study on Customary IHL. Put differently, while Rule 3 requires destruction of a certain gravity, the assessment of whether the natural environment has been "destroyed" for the purposes of this rule does not require satisfaction of the "widespread, long-term and severe" criterion.

In our view, another criterion for assessing destruction is whether the foreseeable cascading or cumulative effects of a given attack, or of an omission or culpable risk, would satisfy the severity threshold. This is especially important for effects that occur after hostilities, such as occupation circumstances or transition periods. For instance, the 2018 Armyansk incident in occupied Crimea illustrates this cumulative effect, where an initial chemical release was followed by delayed acknowledgement, contradictory official messaging, and disinformation, collectively slowing precautionary measures (monitoring, warnings, evacuation, plant shutdown) and thereby magnifying respiratory harm, ecological damage (bird deaths, vegetation die-off), and cross-boundary risk (Coynash 2018; Talant 2018). Even where the immediate cause (whether plant failure or storage-pond evaporation) was contested, the foreseeability of continued emissions, worsening exposure, and environmental degradation was evident, and the opacity surrounding the incident impeded effective mitigation. These cascading and cumulative dynamics therefore provide a plausible basis for treating the harm as destruction for the purposes of Rule 3. An intersectional analysis can further

² As the natural environment is protected as a civilian object, the principles of distinction, proportionality, and precautions constrain how belligerents conduct hostilities. Environmental components central to climate mitigation and adaptation such as forests and natural carbon sinks are *prima facie* protected as civilian objects under IHL, including through the principle of distinction in article 52 of Additional Protocol I.

inform this assessment by revealing diverse, cumulative, and cascading consequences relevant to the legal characterisation of harm under IHL.

Read through the *lex specialis* of occupation law, such compounding dynamics are directly relevant to the Occupying Power's duties under Geneva Convention IV: (i) the strict ban on destruction of property except where absolutely necessary by military operations (art. 53); (ii) the obligation to ensure and maintain public health and hygiene, which extends to preventing or mitigating environmental hazards that threaten public health (art. 56); (iii) the prohibition on diverting relief consignments from their humanitarian purpose, covering supplies crucial to environmental health such as water-purification and sanitation items (art. 60). Taken together, these obligations provide guidance for assessing severity; where foreseeable, the compounding effects of environmental destruction on civilian health, essential services, and the natural environment are left unaddressed, instrumentalised, or weaponised, they can tip the analysis toward destruction within Rule 3.

Moreover, the severity of environmental destruction considered unlawful is not static. It evolves as the imperative to limit environmental harm gains recognition and as scientific understanding of the interdependence of ecosystems and the civilian populations that rely on them advances. Nevertheless, by way of example, the weaponisation of the environment is evident in State practice concerning the 1991 Gulf War, including the deliberate burning of oil fields and the discharge of oil into the Persian Gulf. Iraq's setting alight of oil wells has been described as "wanton" and "indiscriminate" destruction undertaken with "no military advantage" (Stahn et al. 2017, 3-6; O'Rourke and Martin 2023, 1607). These legal qualifications track the IHL principles of distinction and proportionality (informed by the concept of military necessity) and guide the assessment of whether the severity of the environmental destruction renders the conduct as 'weaponisation' of the environment.

Given the paucity of direct norms concerning environmental weaponisation, we agree with Stahn in employing a coherence-based reading of international humanitarian law, environmental law, human rights; transitional justice; arms control/disarmament; UN law and practice including sanctions, protection of natural resources, and the law of peace operations (Stahn et al. 2017, 4, 5); development; and domestic law to broaden protection and to reflect both gender-differentiated impacts and the intrinsic value of the environment, *in bello* and *post bellum* (O'Rourke and Martin 2023, 1621). These bodies of law offer complementary perspectives on environmental protection and require coordination informed by gender and intersectional analysis. Applied to environmental weaponisation, this entails assessing

environmental destruction not only in terms of ecological or civilian harm, but also the differentiated and overlapping forms of exposure it creates.

Applying an intersectional, gender lens *in bello* and *post bellum* is essential to a coherent account of the prohibition of environmental weaponisation, as it reveals how the deliberate use or exploitation of environmental harm as a method of warfare produces differentiated impacts on women and how those gendered patterns of exposure, mobility, and caregiving can in turn amplify the coercive and cumulative effects of the environmental damage (O'Rourke and Martin 2023, 1621). The relative weight of these rationales, both during hostilities and in transition periods, particularly regarding remedies, may shift with the nature and intensity of the conflict and as societies move from the mere absence of violence toward substantive, durable forms of peace (Stahn et al. 2017, 5). This broader reading also accords with Ukraine-focused policy analysis framing environmental recovery and women's participation as mutually reinforcing prerequisites for a just, inclusive, and sustainable reconstruction process (Shevchuk and Duncanson 2024, 15).

3. Remedies for Environmental Harm Caused by War

The restoration of damaged ecosystems and environmental protection has gradually emerged as integral elements of post-conflict peacebuilding and reconstruction. Although this connection is still evolving and far from universal adoption, there is a growing consensus that addressing environmental harm is essential to rebuilding communities, restoring livelihoods, and ensuring a transformative approach to post-conflict recovery. As Bruch emphasises, integrating environmental considerations into transitional justice and recovery frameworks can strengthen the legitimacy and sustainability of peace efforts (Bruch 2021, 4-5).

At the same time, international legal and policy discourse increasingly recognises that the design of remedies must incorporate a gender perspective, acknowledging that harm caused by armed conflict is experienced in differentiated ways and that formally neutral reparative frameworks risk perpetuating existing structural inequalities. For instance, CEDAW General Recommendation No. 30 requires women's meaningful participation in transitional justice and post-conflict reconstruction, while General Recommendation No. 37 emphasises gender-responsive recovery, gender-impact assessments, disaggregated data and attention to intersecting inequalities in environmental and disaster contexts (CEDAW 2013; 2018). Similarly, UN Environment Assembly Resolution 4/17 links women's rights and participation to effective and sustainable environmental governance

(UNEA 2019); while the Nairobi Declaration emphasises non-discrimination, autonomy and the participation of women and girls in determining the forms of reparation most appropriate to their circumstances (Nairobi Declaration 2007). Yet, despite these developments, there remains no coherent approach to remedies for environmental damage, as international law provides only limited guidance on how “full reparation” should be assessed, valued and implemented where environmental harm is cumulative, long-term, collective and difficult to quantify (Kong and Zhao 2023; Weir and Denisov 2024, 1).

Thus, Ukraine’s post-conflict recovery provides a context for examining how international law and rights-based approaches can inform environmental justice within post-conflict accountability and reconstruction.

3.1. *Jus Post Bellum* and the Environmental Foundations of Sustainable Peace

Despite the lack of sufficient guidance on designing and implementing environmental reparations, the normative obligation to repair war-related ecological harm is strengthening. *Jus post bellum* increasingly incorporates environmental protection as a condition for just, sustainable, intergenerational peace. A fundamental premise of *jus post bellum* is that environmental damage must be addressed regardless of whether a war was lawful or how it was fought. The rationale is that lasting, sustainable peace requires repairing the war’s ecological footprint and its social and economic wounds (Bruch 2021, 6-9; UNGA 2022b, Principle 22). In most cases, the social and environmental wounds must ideally be addressed together.

The Principles on the Protection of the Environment in Relation to Armed Conflicts underscore the duty of belligerent parties to address restoration and protection of the environment damaged by the conflict as part of the peace process (UNGA 2022b, Principle 22). This obligation must also be read in conjunction with international frameworks that require substantive gender equality in post-conflict reconstruction, including the above-mentioned CEDAW General Recommendations No. 30 and No. 37 (CEDAW 2013; 2018), as well as the “Women, peace, security” Agenda. Although Security Council Resolution 2467 (2019) addresses conflict-related sexual violence specifically, its survivor-centred and gender-responsive conception of remedy also offers relevant guidance for evaluating whose experiences and priorities shall inform post-conflict reparative frameworks (UNSC 2019).

This perspective informs several expectations of post-conflict conduct. First, it imposes a continuous obligation that does not cease after a certain period or after adopting urgent interim measures. Assessing environmental harm in armed conflict is notoriously difficult, even more so when considering

its gendered effects. Damage assessment competes with other post-conflict priorities; reliable data are often unavailable, some effects unfold slowly and materialise only long after hostilities cease, and many effects are irreversible (Bruch 2021, 8).

Second, *jus post bellum* frames an intergenerational obligation of environmental stewardship in war's wake. Protecting the environment during and after conflict is seen as a duty "inherently linked to the needs of future generations," and a matter of due diligence (Bruch 2021, 10).

Third, this intergenerational approach bolsters the normative case for a "duty to rebuild" war-torn environments as part of ending a conflict justly. Traditional just war theory viewed rebuilding as a moral principle; the modern view is that there is, at the very least, a moral imperative, and arguably an emerging legal expectation, to restore the affected environment (Bruch 2021, 10–11).

Thus, this moral imperative extends even to conflicts in which no party "wins": regardless of victor or vanquished, environmental harm must be assessed and addressed by whoever caused it (and, if the perpetrators cannot or will not, the responsibility may fall to others, as will be demonstrated below).

While this normative foundation establishes an obligation to address environmental harm, it offers limited guidance on how remedies should be designed in practice. This gap exposes the inadequacy of classical reparation models and prompts the search for more transformative approaches.

3.1.1. Rethinking Environmental Reparations

Classical reparation models, such as restitution, compensation, and satisfaction, are often insufficient in environmental cases. Ecological harm is often irreversible, unfolds over long timescales, and affects collective interests and future generations in ways that monetary valuation or symbolic measures cannot fully capture. Furthermore, methods for assessing and evaluating environmental harm are not universally established or agreed upon (UNEP 2023a). When considering claims arising from Iraq's invasion and occupation of Kuwait, for example, the Environmental Panel of the United Nations Compensation Commission, acknowledged the absence of evaluation methods for environmental damage, and chose to rely on the general principle that "reparation must, as far as possible, wipe out all the consequences of the illegal act." (UN Compensation Commission 1991, para. 80).

International courts have nevertheless demonstrated that environmental reparations need not be limited to monetary value. In *Costa Rica v. Nicaragua*, the International Court of Justice took into account, among other things, even the capacity of the damaged area for natural regeneration (ICJ 2015,

para 78); while Inter-American Court of Human Rights in *Saramaka People v. Suriname* considered, besides the material damage, also the immaterial damage caused to a people's spiritual connection with their territory and alterations to the very fabric of their society (IACtHR 2007, para. 200).

Therefore, as is apparent both from international judicial approaches to remedies and from the recent doctrine, a more appropriate paradigm is that of *transformative reparations*, which derive from human rights law, in particular with respect to cases of systematic gender-based and sexual violence (Killean 2021, 11; UN Secretary-General 2025, 54; Quinn 2023).

Killean argues that reparations should: (i) understand how they may interact with environmental damage through the use of environmental impact assessments; (ii) monitor, evaluate, and mitigate against any unintended environmental effects of other types of reparations; and (iii) positively influence environmental sustainability wherever possible (Killean 2021, 11).

Hence, transformative reparations extend beyond compensation to address the deeper social, structural, and environmental inequalities that existed prior to the harm. They must also prioritise inclusion, empowerment, and long-term social change over restoring the *status quo*. Transformative reparations aim to build fairer, more equitable societies, ensuring that recovery also entails transformation.

The Nairobi Declaration was one of the first documents to emphasise that reparations must contribute to the post-conflict transformation of socio-cultural injustices and political and structural inequalities that shape the lives of women and girls. Reintegration and restitution are therefore insufficient where they merely return victims to pre-conflict conditions, since the inequalities underlying violations of women's and girls' rights frequently precede the conflict itself (Nairobi Declaration 2007, para. 3).

Later, in the Order for Reparation in the *Lubanga* case, the International Criminal Court stated that "reparations need to address any underlying injustices"; their implementation shall "avoid replicating discriminatory practices or structures that predated the commission of the crimes", as well as further stigmatisation of the victims and discrimination by their families and communities. What is more, the Court emphasised the importance of a gender-inclusive approach in guiding the design of the reparations mechanism (ICC, Prosecutor v. Lubanga 2015, paras. 17-18).

The abovementioned *Saramaka* judgment illustrates the transformative potential of collective reparations: it provided for the establishment of a community development fund for education, housing, agriculture, healthcare, electricity and drinking water, administered through a participatory committee involving victims' representatives (IACtHR 2007, paras. 201-202).

At the same time, the IACtHR treated the community as largely homogeneous and did not address women's representation, gendered access to resources or the risk of reproducing internal inequalities. It therefore shows that reparations may be transformative, but not equally for all.

In this context, *Lubanga's* gender-inclusive reparations principles and Killean's eco-sensitive approach to transformative reparations should be read together to avoid reproducing pre-existing discriminatory structures.

In the case of Ukraine, this means not only cleaning up pollution or rebuilding ecosystems, but reshaping how the environment is governed and valued. It requires a system-wide, transformative approach, one that addresses structural vulnerabilities and inequalities, empowers local and national capacities for gender-sensitive recovery, and integrates environmental restoration directly into transitional justice and recovery planning (Slobodian 2023; Bruch 2021, 11–13).

3.1.2. Remedy Beyond Attribution

Reconceptualising remedies inevitably raises questions of responsibility and attribution. Those questions are important, but they fall beyond the scope of this article. Although we briefly address responsibility for repairing environmental harm, our focus is on whether the emerging remedial framework for Ukraine adequately captures the gendered and intersecting harms arising from the weaponisation of the environment and provides scope for a more transformative approach to reparation.

The UN General Assembly's 2022 recognition of the right to a clean, healthy and sustainable environment reinforces the understanding of environmental remediation as a legal right rather than humanitarian assistance (UNGA 2022c; Zhou and Anthony 2023). In accordance with the Articles on Responsibility of States for Internationally Wrongful Acts and the Principles on the Protection of the Environment in Relation to Armed Conflicts, States must provide full reparation for environmental harm resulting from internationally wrongful conduct (ILC 2001; UNGA 2022b). Accordingly, Ukraine has consistently asserted its right to reparations, including for the ecological harm resulting from Russia's war of aggression. This has been articulated as a consistent precondition for Ukraine's participation in peace negotiations (Office of the President of Ukraine 2022; Democratic Initiatives Foundation 2023). Efforts to ensure accountability for the material, social, and environmental consequences of Russia's aggression have increasingly drawn on international precedents. However, any UN Security Council mechanism similar to the UN Compensation Commission for Kuwait is not feasible today due to Russia's veto power (UNCC 1991).

Moreover, Russia has not only refused to acknowledge responsibility for environmental harm but has actively obstructed documentation and assessment efforts by denying access to occupied territories and failing to cooperate with international monitoring mechanisms (OHCHR 2024; UNEP 2023b; Democratic Initiatives Foundation 2023; Reuters 2025). Thus, despite the clear legal and moral imperative, reparations from the Russian Federation remain hypothetical. To date, no binding international mechanism exists to compel Russia to provide a remedy, at least until a judgment is rendered by an international court. In practical terms, the financial and operational burden of recovery rests squarely on Ukraine and its international partners (European Parliamentary Research Service 2023, 2).

In such circumstances, access to remedy cannot depend on the consent or cooperation of the responsible State. Evolving practice supports the development of alternative mechanisms, such as international registries of damage, asset-based reparation funds, and regionally coordinated restoration initiatives, that centre the urgent fulfilment of victims' rights, even in the absence of the wrongdoer's cooperation (Bruch 2021; UNGA 2022a; CIEL 2024, 16–19). It is reflected in Principle 25 of the Principles on the Protection of the Environment in Relation to Armed Conflicts, which provides that, where the source of environmental damage is unidentified or reparation is unavailable, States and relevant international organisations should take appropriate measures to ensure that the damage does not remain unrepaired or uncompensated, including through special compensation funds or other forms of relief and assistance (UNGA 2022b, Principle 25).

In the case of Ukraine, the international community made significant progress in developing an institutional basis for such an approach. In 2022 the UN General Assembly adopted Resolution A/RES/ES-11/5, affirming that Russia must bear the legal consequences of its internationally wrongful acts and recommending the creation of an international register of damage to document evidence and claims from affected persons and the State of Ukraine (UNGA 2022a, para. 4). The subsequent Resolution ES-11/6 reaffirmed these principles, and called for international cooperation in addressing the global impacts of the Russian aggression, inter alia, on food security, energy, finance, the environment, and nuclear security and safety. It also underscores that any arrangements for a comprehensive, just, and lasting peace in Ukraine should take these factors into account (UNGA 2023, Preamble and para. 10). Although these developments have advanced a rights-based international framework for post-conflict remedy, the resolutions still remain largely gender-neutral (Kartepe and Zheltukha 2025, 3), and do not translate their recognition of the war's humanitarian consequences for vulnerable groups, including women, into remedial principles. Such omission could risk treating

affected persons as a homogeneous group and leaving differentiated barriers to remedy outside the formal framework. The subsequent design of the Register of Damage, though, has addressed this gap by incorporating victim-centred and gender-sensitive principles into its procedures and claims architecture.

Nevertheless, this omission was partly addressed by the approach adopted by the Register of Damage for Ukraine, established under the auspices of the Council of Europe in 2023 as the first component of the international compensation mechanism envisaged in the UNGA Resolutions. Its claims framework expressly encompasses environmental damage and the pillaging or appropriation of natural resources, while extending beyond aggregate State losses to recognise individual claims relating to, i.a, displacement, serious personal injury, sexual violence, loss of housing and employment, and loss of access to healthcare and education (Council of Europe 2025a). Moreover, the Register has formally adopted victim-centred and gender-sensitive principles, including participation of victims and survivors, accessibility, attention to gendered barriers, and the recognition that war produces different patterns of harm among women and men (Register of Damage for Ukraine 2026a; 2026b; Riga Principles 2023).

The Convention establishing an International Claims Commission for Ukraine, the mechanism's second component, was adopted and opened for signature in December 2025. The Commission is intended to examine claims recorded by the Register, determine compensation and decide the amounts due. Nevertheless, the Commission is not yet operational, and the future compensation fund (the third component of the mechanism) has not yet been established or adequately financed. The practical availability and enforcement of reparations, therefore, remain uncertain (Council of Europe 2025b; 2026).

Importantly, the pursued alternative mechanism also created an opportunity to develop a more rights-based and gender-sensitive approach to recovery, softening the focus on direct, quantifiable damage typical of traditional interstate compensation models. Thus, we must assess this approach by asking whose losses it recognises, whose knowledge is treated as evidence, who participates in setting recovery priorities, and whether reparation merely restores pre-war conditions or addresses the inequalities embedded within them (O'Rourke and Martin 2023).

This architecture is promising but not inherently transformative: environmental damage and the appropriation of natural resources are currently framed principally as claims brought by the State of Ukraine, while many of their human consequences appear under separate individual categories. Thus, deliberate coordination is necessary to avoid reproducing

the fragmentation criticised by feminist scholarship, such as assessing ecosystem damage separately from the loss of health, livelihoods, safety, or community relationships it produces (O'Rourke and Martin 2023, 1614–1618). A future Claims Commission should therefore permit the cumulative and intersecting consequences of environmental harm to inform both the assessment and valuation of claims (Shevchuk and Duncanson 2024, 11-12).

Furthermore, although future compensation remains central to its work, the Register expressly recognises that reparation cannot be limited to monetary awards. This broader, victim-centred understanding creates space for an approach that acknowledges non-material and structurally mediated harms and promotes accessible procedures, meaningful participation, essential public services, sustainable livelihoods and community-led ecological recovery. Environmental reparations, together with Ukraine's recovery strategy discussed below, may thus provide opportunities to advance ecological restoration while also addressing existing inequalities (Register of Damage for Ukraine 2026a).

3.1.3. Rebuilding Green: Environmental and Gender-Sensitive Justice in Ukraine's Recovery Strategy

Ukraine's recovery architecture, developed with the European Union, G7 and G20 partners, is a plan committed to rebuilding the country "better and greener". It is framed as an opportunity for modernisation, sustainability, alignment with European environmental and social standards, and avoiding restoring pre-war inequalities.

The European Commission established this direction by linking the long-term reconstruction framework to Ukraine's European integration and compliance with EU climate, environmental, and digital standards, ultimately paving the way for the Ukraine Facility Plan (European Commission 2022). The Lugano Declaration, adopted in 2022 at the first Ukraine Recovery Conference ('URC'), reinforced these principles and committed to aligning reconstruction with the Paris Agreement, the 2030 Agenda for Sustainable Development and the green transition. It also identified gender equality, inclusion, and respect for human rights as the guiding principles of Ukraine's restoration, aimed at reducing existing disparities (Lugano Declaration 2022).

The value of Ukraine's recovery framework, therefore, lies not in parallel commitments to environmental sustainability and gender equality, but in its potential to integrate them throughout project selection, financing, implementation and monitoring.

The Alliance for Gender-Responsive and Inclusive Recovery ('Gender Alliance'), launched at the URC 2024 in Berlin, provides an institutional basis for this integration by seeking to embed gender equality and

women's empowerment across reconstruction processes (Serdyuk 2024). Its transformative potential, however, depends on whether gender considerations influence major investments in energy, infrastructure, agriculture and environmental restoration, rather than being confined to targeted programmes for women.

Ukraine's Peace Formula, presented at the G20 summit in 2022, similarly places environmental recovery within a broader framework of accountability and sustainable peace (Ministry of Foreign Affairs of Ukraine 2022). Its provisions on environmental security connect environmental damage assessment, impacts on human health, biodiversity preservation, accountability for environmental harm, and the transition to a green economy in the restoration and reconstruction process (Office of the President of Ukraine 2022).

Hence, Ukraine's recovery strategy links green recovery to European integration and climate objectives, while treating gender as a cross-cutting dimension that informs recovery policies and measures across all sectors, rather than as an isolated policy strand (Ukraine Recovery Platform 2022, Serdyuk 2024).

The successive URCs demonstrate a gradual movement from broad normative commitments towards financing and implementation. London 2023 produced more specific pledges; Berlin 2024 reinforced them; Rome 2025 focused on investment mobilisation and private-sector involvement; and Gdańsk 2026 moved the process further towards implementation and resilience (European Parliamentary Research Service 2025). Yet this model is not without risks. As recovery becomes increasingly investment-driven, environmental and gender objectives may be weakened unless they are translated into binding funding conditions, gender and environmental impact assessments, measurable indicators, and accountability mechanisms (Broniszewska 2025, 14-15).

URC 2026 in Gdańsk was expected to move the recovery agenda towards sustained implementation and could have consolidated the stronger gender focus achieved at URC 2025, where a dedicated gender panel gave gender-responsive recovery visible political prominence. In practice, however, the proposed stand-alone gender panel was removed from the final programme during coordination with the Polish organisers, leaving the Ukrainian side to advance the issue principally through a dedicated side event (EIGE 2026). Although gender was formally designated as a cross-cutting issue, its visibility was reduced, including through the predominantly male composition of many high-level panels.

This is particularly concerning because, despite the Gender Alliance having grown to nearly 120 members, publicly demonstrable progress in translating

its commitments into measurable, cross-sectoral outcomes remains limited (UN Women 2026).

3.2. The Ukraine Facility: Operationalising Green and Gender-Responsive Recovery

The establishment of the Ukraine Facility ('Facility') in 2024 was another crucial step in translating the created solidarity-based mechanism into a financial and institutional framework, while an international compensation mechanism is still being developed. Established by Regulation (EU) 2024/792, the Facility provides up to €50 billion in grants, loans and technical assistance between 2024 and 2027 to support recovery, reconstruction, modernisation and progress towards EU membership (EU 2024, recital 48, arts. 1-2). Its objectives include addressing the social, economic and environmental consequences of Russia's aggression and promoting a sustainable, climate-neutral, and inclusive economy (EU 2024, art. 3). The significance of the Facility, hence, lies in demonstrating how *transformative* principles can inform recovery.

The Regulation brings environmental protection and green transition, human rights, gender equality, inclusivity, and non-discrimination within a single implementation framework. It requires supported activities, "to the extent possible in a war-torn country," to comply with EU climate and environmental standards, including climate change mitigation and adaptation, biodiversity conservation, gender equality mainstreaming, and non-discrimination (EU 2024, Recitals 33-34, arts. 4, 5). It also restricts the financing of fossil-fuel projects to cases of strict necessity and requires that at least 20% of investments contribute to climate and biodiversity objectives (EU 2024, Recitals 30-33 and art. 28). These provisions recognise that environmental sustainability and substantive equality cannot be pursued through separate policy tracks.

The Ukraine Plan 2024-2027 ('Plan') serves as the operational roadmap for these reforms. It seeks to integrate environmental objectives throughout energy, agriculture, industrial policy, waste management, land use and reconstruction. (Ukraine Plan 2024-2027, 290-313). Environmental priorities also spill over into other sectors, such as green energy reforms, agricultural measures for sustainable land use and demining, "green metallurgy" initiatives and low-emission reconstruction (Ukraine Plan 2024-2027, 157, 195-224, 254).

The Plan also incorporates gender considerations into support for women-owned small and medium-sized enterprises, their access to grants and financing, gender-equality requirements in public procurement, labour-

market reforms, education and reskilling, social protection, and care-economy measures (Ukraine Plan 2024–2027, 10–11, 120–122, 145–146, 165–166, 172). It thereby reflects an explicit commitment to integrate a gender perspective throughout the implementation, monitoring, and evaluation of recovery policies.

The mutually reinforcing environmental and gender dimensions of the Facility, therefore, offer considerable transformative potential. Yet this outcome is not automatic. It depends on whether gender and human-rights standards at the end will operate as substantive conditions governing funding and accountability, rather than as formal commitments added to projects whose priorities have already been determined.

Despite the possible challenges, the model and mechanisms developed for Ukraine carry the potential to shift from political pledges toward tangible delivery. In an international legal order undergoing profound transformation, this emerging rights-based approach to remedies and reparations may therefore assume broader normative significance.

Conclusion: Lessons Learned and the Promise of a Precedent

The environmental devastation caused by Russia's war against Ukraine is not an incidental by-product of hostilities, but a structural feature of contemporary warfare with profound legal, social, and gendered consequences. Environmental harm in Ukraine has unfolded at a scale unprecedented in modern Europe, affecting ecosystems, public health, livelihoods, and security simultaneously. This destruction has operated not only as a "silent casualty" of war, but also, in several instances, as a strategic instrument that amplifies civilian vulnerability, undermines resilience, and entrenches long-term insecurity. When viewed through a gender-sensitive lens, these dynamics expose a double vulnerability in which environmental damage disproportionately burdens women and other already vulnerable groups.

Against this backdrop, the Ukrainian case illuminates both the limitations of existing international humanitarian law and the growing importance of *jus post bellum* as a framework for addressing environmental harm after conflict. While international law offers only fragmentary guidance on environmental weaponisation and post-conflict remediation, emerging practice in Ukraine demonstrates how these gaps may be partially bridged through coherence-based interpretation and institutional innovation.

In particular, integrating environmental protection, gender equality, and remediation into post-conflict recovery planning marks a significant normative shift. International recognition of the central role of a healthy environment in sustaining peace and human security has received increasing international attention. Russia's war against Ukraine has reinforced this awareness with particular urgency. Yet whether the initiatives outlined above will translate into lasting results depends on several evolving factors.

With the classical models of reparation being ill-suited to address the cumulative, cascading, and often irreversible nature of wartime environmental damage, and the absence of viable international legal avenues for seeking reparations from the aggressor state, Ukraine and its international partners have operationalised a transformative approach to remedies, one that aligns environmental restoration with structural reform, green transition, and inclusive governance. All the instruments in Ukraine's vast post-conflict reconstruction mechanism collectively reflect an emerging architecture of environmental and gender-responsive remedies that does not depend solely on the consent or cooperation of the wrongdoing State. While far from complete, this architecture represents a meaningful departure from *ad hoc* or charity-based models of post-conflict assistance toward a rights-based approach grounded in solidarity.

Looking ahead, the Ukrainian experience offers several lessons of broader relevance. First, it underscores the necessity of early, systematic documentation of environmental harm, even amid ongoing hostilities, as a foundation for future accountability and remediation. Second, it highlights the importance of integrating gender perspectives from the outset, rather than retrofitting them into ostensibly neutral recovery frameworks that risk reproducing pre-existing inequalities. Third, it demonstrates that environmental remedies can and *should* be embedded within wider processes of economic and institutional reform, as well as the green transition.

At the same time, significant challenges remain. Environmental damage continues to accumulate as the war persists, while access constraints, data gaps, and security risks complicate assessment and verification. The absence of a binding international mechanism capable of compelling the Russian Federation to provide reparations casts uncertainty over the long-term sustainability of remedial efforts. Moreover, Ukraine's reconstruction will itself generate environmental pressures and carbon costs that must be carefully managed if the promise of a green recovery is to be realised in practice rather than rhetoric.

Yet despite these obstacles, the Ukrainian case is profoundly promising. It demonstrates that even under conditions of denial, occupation, and ongoing conflict, it is possible to articulate and begin implementing a forward-

looking remedial framework that treats environmental integrity and gender equality as foundational to peace. The Register of Damage for Ukraine and the emerging International Claims Commission, together with the solidarity framework developed through the Ukraine Recovery Conferences and the Ukraine Facility, offer a concrete example of this shift by linking immediate recovery needs with the long-term pursuit of accountability. If consolidated and refined, this emerging practice may serve as a precedent for future recovery mechanisms, contributing to the gradual evolution of international law toward stronger environmental protection, especially against environmental weaponisation, in a way that recognises gendered vulnerabilities as well as more inclusive forms of post-conflict justice.

In this sense, Ukraine is not only a site of immense environmental loss, but also a testing ground for new legal and institutional responses to environmental harm in war. Whether this precedent will crystallise into lasting norms depends on sustained political will, international cooperation, and translating commitments into concrete outcomes. Nonetheless, the trajectory is clear. Environmental accountability and gender-responsive remedies shall no longer be deemed peripheral to post-conflict recovery as they are central to how peace is conceived as just, sustainable, and resilient in the twenty-first century.

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